

The Hypoglycemic Health Association

NEWSLETTER

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The NEWSLETTER of the Hypoglycemic Health Association is distributed to members of the Association and to Health Professionals with an interest in nutritional medicine and clinical ecology.

Please note that we are now meeting **three** times each year **on the first Saturday of the Months of April, August and December**. The financial future of the Association has now become more precarious because of the fewer number of members. The Association does not accept any government funding and is entirely supported by the fees paid by members and generous donations received from other sources. We have taken steps to contact previous members asking them to rejoin the Association. We would like to ask present members to encourage their friends to join the Association.

Over the 19 years since the establishment of the Hypoglycemic Health Association the diagnosis of hypoglycemia has become more common among practitioners. However, there is still much resistance to the acceptance of this disease among psychiatrists and psychologists who still restrict treatment of mental illness within the narrow confines of the drug/psychotherapy model.

Our Next Public Meeting will be at 2.00 PM
on Saturday, the 7 August 2004
at **YWCA**

5-11Wentworth Ave, SYDNEY
and our guest speaker is
Ms Annie Morris Wieland

who will be speaking
on the subject of

"Exercise at any Age"

Annie Morris Wieland is a naturopathic practitioner and psychotherapist with 25 years experience in practice in Australia, America, and Germany. She is an insightful Medical Herbalist and specialises in Manual Lymph Drainage in the Vodder tradition. She holds a degree from the Federation of German Healing Practitioners and is currently lecturing at The Australasian College of Natural Therapies.

Her speciality is in:

Naturopathy, Medical Herbs, Health Coaching
Qualifications

Dip. Naturopathy (Germany)

Dip. Medical Herbalist (Southern Cross Herbal School, Gosford)

Manual Lymph Drainage (Dr Vodder - Austria)

Previous Copies of the Hypoglycemic Newsletter

Back issues of the Hypoglycemic Newsletters are available at the NSW State Library, Macquarie Street, Sydney. They are filed under NQ616.466006/1 in the General Reference Library.

Other libraries holding copies are: Stanton Library, North Sydney; Leichhardt Municipal Library; The Sydney University; The University of NSW and Newcastle University. The Association will provide free copies in PDF format to any library upon request to jurplesman@hotmail.com

The Association also has a web site at: <www.hypoglycemia.asn.au> where there are some Newsletters in PDF format, as well as articles on clinical nutrition and self-help psychotherapy.

Books for sale at the meeting

Sue Litchfield: **SUE'S COOKBOOK**
Dr George Samra's book

The Hypoglycemic Connection II is available at Dr Samra's surgery or PO Box 394, Kogarah NSW 2217. Fax: 612-9588-5290

Jurriaan Plesman: **GETTING OFF THE HOOK**

This book is also available in most public libraries (state and university). By buying this book at the meetings you are supporting the Hypoglycemic Health Association.

Any opinion expressed in this Newsletter does not necessarily reflect the views of the Association.

DISCLAIMER: The articles in this newsletter are not intended to replace a one-to-one relationship with a qualified health professional and they are not intended as medical advice. They are intended as a sharing of knowledge and information from research and experience in the scientific literature. The Association encourages you to make your own health care decisions based upon research and in partnership with a qualified health care professional.

The Newcastle branch of the Association are still meeting with the assistance of Bev Cook. They now meet at ALL PURPOSE CENTRE, Thorn Street, TORONTO. Turn right before lights at Police Station, the Centre is on the right next to Ambulance Station. For meeting dates and information ring Mrs. Bev Cook at 02-4950-5876.

Entrance donations at meetings

Entry donation is tax deductible and for non-members will be \$5, for members \$3 and family \$5. People requiring a receipt for taxation purposes will be issued when asked for it.

Donations for raffle

One way of increasing our income is by way of raffles. If any member has anything to donate towards the raffle, please contact Dr George Samra's surgery at 19 Princes High-

way, Kogarah, Phone 9553-0084 or Sue Litchfield at (litch.grip@bigpond.com).

At the meeting on the 13 March 2004, **Betty Jones** won the lucky door price. The raffle was won by **Jenny Eke**.

The Association wants to thank Marie Grady, Pat Parr and Ms Stokes who have so generously donated for the raffles.

Also the Association wants to thank some gracious donor who left at Dr Samra's surgery a lovely tapestry of pelicans on the beach as a donation to the Association.

Fund raising activities

We need money, ideas, donations, bequests (remember us in your will), **all donations over \$2 are tax deductible.**

Raffles

Conducting raffles is an important source of additional revenue for the Association. Raffle tickets are available at \$1 each or three tickets for \$2 at Dr George Samra's surgery. Donations for raffles would be appreciated. Items to be raffled should be on display at the surgery and will be raffled at the next public meeting of the Association.

The Kogarah support group: The Support Group schedule has been revised and meetings will be held in February, June and October (dates to be advised) in future. **HOWEVER, INFORMATION WILL BE AVAILABLE** from Jeanette 9525.9178 or Lorraine 9520.9887, at any time.

The Tasmanian Hypoglycemic support group. For members in Tasmania if you want to form a group or meet people with hypoglycemia phone Alison on 040 9966 385 A/hours or for more info (altennan@bigpond.com).

NEWS FROM KOGARAH SUPPORT GROUP

Our June meeting was attended by only 6 people. Perhaps this was due to our changed dates, although all our regulars were advised of the new dates.

Prior to this we averaged 12-14, with 2 or 3 new people included. We expect numbers to increase again once the new meeting schedule becomes more familiar, ie every 4 months instead of every 3 - in February, June and October.

VALE BILL WITTON

It is with deep regret that we

announce Bill's passing after a short illness. Bill chaired our meetings; he was a caring, compassionate man and we will miss him and Margaret. Three of our members attended a Service for Bill. He was one of our founding members and will always remain in our thoughts.

The final Support Group Meeting for the year will be on **Saturday 16th October at 1.30pm**, at Dr Samra's rooms in Kogarah. Cost is \$2, with information and recipe sheets available. Tea and coffee will be available after the meeting. **ANY ENQUIRIES RING JEANETTE 9525.9178 OR LORRAINE 9520.9887.**

Cinnamon for Hypoglycemics

Richard Anderson at the US Department of Agriculture's Human Nutrition Research Center in Beltsville, Maryland, accidentally discovered that as little as just a half teaspoon a day of **Cinnamon** lowered blood sugar levels in type II diabetic patients.

The active ingredient in cinnamon turned out to be a water-soluble polyphenol compound called MHCP. In test tube experiments, MHCP mimics insulin, activates its receptor, and works synergistically with insulin in cells.

In the volunteers, it lowered blood levels of fats and "bad" cholesterol, which are also partly controlled by insulin. It neutralised free radicals, damaging chemicals which are elevated in diabetics.

<http://www.newscientist.com/news/news.jsp?id=ns99994413>

HORMONES THAT AFFECT ENERGY AND MOODS

by
Dr George Samra. MB, BS (Sydney) FACNEM

OVERVIEW

The major organs secreting hormones as follows:

Pancreas

Insulin
Glucagon

Adrenal

Cortex
Glucocorticoids - Cortisol
Mineralocorticoids - Aldosterone
Adrenal Androgens - DHEA
(Dehydroepiandrosterone)

Medulla

Adrenaline
Noradrenaline
Dopamine

Thyroid gland

T3 & T4

Brain

Pituitary Gland
ACTH (adrenocorticotrophic hormone) stimulates all 3 Cortex Hormones
ADH (antidiuretic hormone)
TSH (thyroid stimulating hormone)
Pineal Gland
Serotonin (happy hormone)
Melatonin (biological or clock hormone)
Pregnenalone is a brain hormone important in memory

There are two types of hormones
Steroidal hormones such as cortisol or estrogen, synthesized from cholesterol-based precursors.

We need cholesterol as a major precursor to steroidal hormones, despite its negative involvement in coronary artery disease.

Amino Acid Hormones they come in three configurations.

Single amino acid derivatives such as dopamine, and the catecholamines such as noradrenaline and adrenaline. Thyroid hormone is a small hormone and is based in amino acid shape; also serotonin and melatonin. These are derived from essential amino acids in food such as tryptophane and phenylalanine. Amino acids (AA) are the basic units that make up the proteins in ones body. There are twenty-one amino acids common to all plants and animals and organisms. AAs are digested and broken down into individual AAs and then they are rebuilt in useful proteins, such as hormones, muscles and enzymes.

Short-chain amino acids (peptides) such ADH (Antidiuretic hormone), TRH (Thyroid Releasing Hormone)

Large Proteins such as Insulin, LH (Luteinizing Hormone), PTH (Parathyroid Hormone) and even Growth hormone are also large molecules.

It is very difficult to get a large molecule such as insulin into the body. Insulin has approximately 130 amino acids. With such large molecules the only way to get the useful protein into the body is by way of injection.

Definition: The term hormone is derived from a Greek phrase “to set in motion”. A hormone is a substance formed in one part of the body and carried through the blood stream to another part of the body to exert its action.

Thus these clever molecules target some other organs which recognize the hormones by their special receptors which fit parts of the hormones. The allowable range of hormonal blood concentrations can be quite large and may be four times more or less than somebody else and still be in the normals range. But when in excess or missing in the body they can have devastating effects.

Obviously for hypoglycemics and diabetics the main hormone is insulin. Reactive Hypoglycemia is basically a disease where the pancreas mishandles sugar and pumps out the wrong amount of insulin and at the wrong time. There is typically an excessive delayed secretion of insulin. This hormone pushes sugar out of the blood and helps it to enter the body cells. But when you push too much sugar out of the blood you finish up with hypoglycemia. Another hormone involved is **Glucagon** secreted by the Alpha cells of to pancreas.

The adrenal gland is probably the main gland that I would like to consider, because it is responsible for major symptomatology, such as tiredness, agitation, the forgetfulness.

The adrenals, situated on top of

your kidneys the size of a 20 cent piece, is divided into two: the cortex is the outer part of the adrenals and the medulla on the inside.

There are three main **Cortex** hormones: cortisol, which is a glucocorticoid, aldosterone and DHEA (dehydroepiandrosterone).

The **Medulla** secretes adrenaline, noradrenaline and dopamine. Of these adrenaline is responsible for most of the adverse effects in hypoglycemia.

Causes of hormone deficiency include:

Ageing, because hormones such as DHEA, aldosterone, ADH, thyroid hormones and cortisol go down as we get older. They usually start to dip by the age of forty.

Autoimmunity, for example Juvenile Diabetes is an autoimmune phenomenon, where presumably a virus may trigger the immune system attack the pancreas.

Infection, inflammation, infarction and haemorrhage, these have all in common a disease process or a vascular accident, or a cancer that is attacking the gland and damaging its ability to produce an adequate amount of hormone.

Mutations - Hormones, Receptors, Enzymes.

Hormone Links

This is a sentence that comes out of Harrison's Principles of Internal Medicine:

"When hypoglycemia develops an orchestral counter regulatory response occurs. Glucagon (P) and Adrenaline (AM) rapidly stimulates glycogenolysis and gluconeogenesis whereas Growth Hormone (BP) and Cortisol (AC) act over several hours to raise glucose levels and antagonize insulin action."

P = Pancreas

AM = Adrenal Medulla

BP = Brain, Pituitary Gland

AC = Adrenal Cortex

Glycogenolysis = break down of glycogen into glucose molecules

Gluconeogenesis = production of new glucose from other food sources

Thus when we have a hypoglycemic dip four glands are called upon to help us; the pancreas, adrenal medulla, pituitary gland in the brain and adrenal cortex.

Glucagon is a pancreatic hormone secreted by the alpha cells in the Islets of Langerhans, which is a 29 amino acid peptide. It is about one third the size of the insulin molecule. It promotes glycogenolysis and gluconeogenesis in the liver, thus raising blood glucose. It is used medically to treat hypoglycemic coma due to insulin overdose.

All doctors are equipped with a glucagon pen. Diabetics that get severe hypoglycemic levels and go into coma, often carry a pen as well. This won't happen to people with reactive hypoglycemia, because their levels will never go that low. There may be rare exception in 1 over 100,000. Compared to adrenaline, which is also an emergency hormone, glucagon is fairly gentle with very few side effects.

Adrenaline is the hormone that causes many of the hypoglycemic symptoms. If your blood sugar goes from 10 mm/L, which is a normal number down to 4 mm/L, which is a normal number, within half an hour, this will trigger an adrenaline response. This happens in the Type 1 and Type 3 Hypoglycemic curve for those who are familiar with the different types of hypoglycemia.

Adrenaline accounts for a lot of

the symptoms of hypoglycemia such as irritability, nervousness, anxiety, dry mouth, muscle tightness in the neck and low back, palpitations and so on. Diabetics quite often experience some of these symptoms.

Insulin is the most important hormone secreted by the beta cells of the pancreas contained in the Islets of Langerhans. It promotes glucose utilization by facilitating the entry into the body cells of glucose. It also promotes protein synthesis using amino acids to make proteins inside body cell and lipid storage in the form of triglycerides. Insulin is a building type of hormone and helps the body to take in nutrients and utilize them.

It responds to glucose levels rather than levels of other nutrients. Unfortunately hypoglycemics have too much insulin with the result that too much sugar leaves the blood and the brain is fueled by what little is left. There is not enough sugar in the blood to feed the brain, resulting in tiredness, vagueness in consequence of the blood sugar levels going too low.

OTHER HORMONES

DHEA

(Dehydroepiandrosterone) is probably a very popular hormone.

It has a lot to do with motivation and drive. People who are deficient become anxious gloomy and sad, have low energy and motivation, may grow lifeless hair and have dry skin. They may have scant hair under arms and in the pubic area, a low libido and typically a "pot belly".

It is the most prevalent hormone in one's body and over a life time is probably twenty times more abundant than any other hormone in production. It is regarded as building block hormone, because it is used by different organs. It is

used by the woman's ovaries to make female hormones. It is used by men's testicles to make testosterone. It is used by the adrenal glands to make hormones as well. So it is a base hormone abundant in the body.

It fights depression, anxiety and promotes a sense of well being and it improves memory.

It is claimed that it also strengthens muscles, keeps mucous membranes moist, and boosts immunity. In women it helps their libido to increase. In experimental animal studies it has been shown to have positive effects in fighting heart disease and cancer. In America you can purchase DHEA over the counter which has led to misuse in sport, because when taken in excess it starts to make androgens including testosterone. The side effects are due to excess testosterone, creating acne, greasy facial hair, oily face and aggression.

In Australia it is far more complicated to get DHEA. A doctor's prescription is required and it can only be obtained from a 'compounding pharmacist' of which there are about twenty in Sydney.

Australian doctors prescribe DHEA when people have tested low on it.

In America people with healthy levels may take far too much of DHEA and may do damage to their body tissue, such as growing excess hair, become cranky and greasy skins. It is wonderful hormone, but it is only wonderful, when people proven to be low on it are given the right dosage.

Cortisol

Cortisol is another hormone from the adrenal gland. It is a stress hormone. People that are deficient in cortisol often have hair loss, thinness in the face, recurring fevers and frequent colds. Synthetic cortisol is cortisone given by way

of injection into swollen joints, or given to asthmatics when they have a severe attack. It boosts up your total cortisol equivalent and people to cope with things. In cortisol deficiency people may have bad skins, hives, psoriasis, pigmentation. They may have low blood pressure faster heart rate and painful joints. Often people have sugar and salt cravings when they are low in cortisol.

Emotional effects - Cortisol helps you to respond quickly and constructively with stress. It prevents vagueness, confusion and irritability. Cortisol is a biological clock hormones coming in a circadian rhythm. It peaks in the morning just after you awake, and it troughs in the evening sometime between about six and ten o'clock in the evening.

It can change quite significantly in the course of one day. There is a large range for a normal range. In **Cushing's Syndrome** too much cortisol is produced. Some of the symptoms are a round-moon face and these are the effects of over treatment also. You get the round trunk and skinny limbs. There is thinning of the skin, soft bones, stomach ulceration and the buffalo hump between the shoulder blades. Sometimes the treatment with cortisone is the only treatment that may save the life of a severe asthmatic or arthritis patient when nothing else works.

Excess cortisol may increase your appetite and promote weight gain, it eases inflammation. It enhances the immune system. In asthma allergies can be terrible. If you have a severe allergic reaction, adrenaline is probably number one we are going to inject it, and cortisol is number two. Cortisol boosts the blood sugar levels in stress. It is one of the slow responses when you are low in blood sugar. In stress it directs blood to the vital organs, fights fatigue and

anxiety, irritability and low blood sugar. If a person is deficient the treatment is between 5-10 mg Cortisone per day. A person with more severe problems may take higher doses. Once you take more than 5 mg per day you risk the nasty side effects of steroids, and cortisone is the primary steroid. The effects of over treatment include stomach ulcerational bleeding and osteoporosis.

If you have been on cortisone for a long time you have to taper off it slowly, so that your own adrenal glands get a chance to make more cortisol for you as it tapers off.

Aldosterone

This is hormone that promotes sodium reabsorption and potassium loss in the kidney. If someone has low blood pressure and struggles to stand erect, then aldosterone is a hormone that helps to maintain the blood, water, salt volumes in the right place at the right time. It helps a person feel comfortable standing up. We are different from most other animals in that we stand erect. In animals on all four the brain and heart is at the same level. So you need some clever engineering and physical chemistry that has to occur in your body to keep the circulation to the brain going.

People with low blood pressure may feel light headed, and they prefer to be lying down than standing up. They should be tested for aldosterone levels.

Typical symptoms of deficiency of aldosterone includes drowsiness and a need to lie down, dehydration and thirst, trouble maintaining a reasonable blood pressure when they stand up, often a increase in urine volume and frequency of urine.

Blood pressure is typically below 100 mm/Hg systolic. The urine is often colourless, because the

urine is not concentrated due to a large volume and the person is quite thirsty.

Other effects are that aldosterone maintains blood pressure when you are standing up, it also helps to keep the mind clear. This is really because it keeps the osmotic pressure within cells inside of the brain to be more or less correct, rather than letting the salt and water in the different adjoining cells have vast differences. Aldosterone fights against drowsiness and poor stamina and the need to lie down. Sometimes people have that rapid heart beat, tachycardia, because of low blood pressure and it may alleviate that as well.

Treatment is with synthetic aldosterone tablets called *Florinef*, which is fludrocortisone acetate. Over-treatment results in tissue swelling, particularly at the ankles, hands and feet. When the doctor prescribes an incorrect dosage, one may suffer from high blood pressure and potassium imbalance.

Aldactone, a fluid tablet is used to control blood pressure. This really works the other way around by blocking aldosterone in the body and changing its effects of fluid movement in the body. It stops sodium from being reabsorbed, and you lose sodium, and this lowers your blood pressure.

Adrenocorticotropic (ACTH)

ACTH is a hormone in the brain from the pituitary gland. It is a 39 amino acid polypeptide. When there is a deficiency people suffer from hair loss and the skin pallor. When you have low thyroid you also get hair loss and skin pallor, but other hormones have the same effects such as low cortisol and ACTH also.

ACTH helps your resistance to

stress. It is a hormone that makes you pump cortisol, makes you more attentive, vigilant and focused and better memory. It controls your circadian rhythm just as cortisol we discussed before. This is because cortisol is controlled by ACTH from the pituitary in the brain.

Other effects are hair loss, skin pallor and you sun burn easily. You may have trouble maintaining energy and it increases your response to stress, infection and surgery and to hypoglycemia as well. When the blood sugar crashes this is stress and two stress hormones are pumped. The immediate one is adrenaline and the slow one is cortisol.

Treatment is rarely used because ACTH is so hard to control. It is a 39 AA peptide administered by injection. If people are deficient we tend to use the hormones that are being produced by ACTH. We give people cortisol, aldosterone and DHEA supplements. ACTH injections twice a week for six months have been used in the past and it is not popular.

Dopamine

Dopamine also comes from the adrenal gland, but now we are considering the inner part of the adrenals called the medulla. Dopamine is a catecholamine. It also secreted from the basal ganglia in the brain. This secretes a group of physiologically important substances, including adrenaline, noradrenaline and dopamine with different roles mainly as neurotransmitters in the functioning of the sympathetic and central nervous system.

People that are low on dopamine have usually a mask like face, muscle are rigid. They have the tremor and a droopy posture with sagged shoulders and skin. The exciting thing about studying hormones is that all hormones have

precursors and you can fix hormone imbalances with precursor hormones. Dopamine is the precursor to adrenaline and noradrenaline, so when these are deficient it may be useful to give a Parkinson's drug like *Sinemet*, which is L-Dopa, to people who have not enough adrenaline in their body. This is especially so if there are signs of muscle stiffness or a rigid posture.

Adrenaline

Adrenaline is a catecholamine with which hypoglycemics identify the most. When adrenaline is pumped into the body as often happens in hypoglycemics it is the fight or flight hormone. Its effects are that dries all secretions, you get dry eyes, dry vagina, dry mouth and dries up sniffles in to nose. It slows down the bowel. When adrenaline is raised it is a response to an emergency. This happens when your blood sugar is crashing and helps to raise blood sugar levels. It redirects blood away from unimportant organs to the vital organs. It gives your brain, lungs, kidneys and your heart more blood. It lowers the blood in your hands and feet, and this is why they get cold. It lowers blood from the womb, which can be a cause of miscarriages. It closes down blood supply to the bowel. It increases gastric acidity and this may cause stomach ulcers. It dilates your pupils and this will improve peripheral vision in case of an emergency. Thus adrenaline is a potent vasodilator and also opens up airways. It is used in cardiac arrest. It is given in acute allergic reactions as in anaphylaxis. People with rhinitis can use adrenaline nose sprays. It is also used in a type of glaucoma called open-angle glaucoma, which changes the size of the pupil and helps the flow of fluid inside the eye ball so as to lower the pressure inside the eye ball.

Noradrenaline

This is the poor cousin of adrenaline. It does practically everything adrenaline does but in a weaker form. It slowly stimulates broncodilation of the lung and increases pumping of the heart. However it is stronger than adrenaline as a vasoconstrictor. Dentists may give an injection of **xylocaine** as a local anaesthetic it is usually with adrenaline.

For hypoglycemics it's not good to have adrenaline in your dental injection. Adrenaline may trigger a whole lot of hypoglycemic symptoms and these patients may feel dreadful for a day or two after the injection. I recommend 2% Xylocaine and no adrenaline.

Noradrenaline does not make your heart pump, and it does not make you anywhere near as nervous and it does not rob you of restful sleep by making you too stimulated.

I have been using an SNRI drug, or **Selective Noradrenaline Reabsorption Inhibitor**, with people who complain of burning hot feet which you often get in diabetes or people that cannot get comfortable at night. It stops the brain from reabsorbing noradrenaline which causes more vasoconstriction and it helps the feet to cool. With diabetics I have been using a combination of **Efexor**, which is an antidepressant or **Edronax**. Efexor may have an adrenaline like effect in some patients. I add to this folic acid which is a B-vitamin to treat people with hot feet, when nothing else seems to work.

But generally I will use drugs as a last resource. Folic Acid can be tried alone, 10mg per day.

Thyroid hormone deficiency

Most people are familiar with thyroid deficiency by their symptoms such as hair loss, dry brittle hair, fatigue, slowness, slow thinking, puffy eye lids and thick lips,

dry skin, cold hands and feet, obesity and constipation, stiffness and painful joints and tissue swelling at the back of the ankles, called myxoedema. A late stage is fluid in the heart which could kill people if thyroid deficiency remains undetected.

When people have hypoglycemia and fatigue, obviously thyroid deficiency is part of the differential diagnosis and the doctor should check the thyroid gland. Thyroid medication helps memory and concentration, and improved mental quickness.

The thyroid hormones increase tissue blood flow, warms the hands up, prevents excessive weight gain, prevents fatigue and hair loss, and energizes all body cells by stimulating the mitochondria. It stimulates fat burning and prevents constipation. But taking thyroid medication is only safe when we are low on it.

Thyroid hormone is beneficial to people that are proven to be low on it or people that have a basal body temperature, a morning temperature below 36.2 C (97.6 F) consistently. The effects of over treatment may cause overheating, hot sweaty skin and palpitations, nervousness, trembling. It can trigger enormous appetite and thirst, and weight loss and poor sleep.

With over persistent treatment or excess thyroid hormone we get thyrotoxic features, including eyes bulging. In the old days thyroid disease was considered to be difficult to treat. Nowadays doctors are more aware of the effects of thyroid disease.

Melatonin

This is a very interesting hormone, responsible for sleeping. When there is a deficiency in this hormone people sleep poorly, they get dream deprivation, agitation and irritability. They get premature graying of the hair. Having

dark bags under the eyes may be a sign of allergies or melatonin deficiency. People tend to have higher systolic blood pressure. They may have hot feet at night, when they have low levels. The emotional effects of melatonin reduce stress and anxiety tension. It is a calming hormone and gives a sense of serenity.

Another effect is promoting sound sleep. Melatonin regulates the timing of all other hormones - thus it is a clock hormone - that helps prevent jet lag, if used properly.

Melatonin is a powerful antioxidant, and helps to protect the heart and immune system and to fight cancer. It helps to relax muscles and lower blood pressure.

There was a recent study done on pilots with some pilots given melatonin and other pilots given placebo, and they could not see any difference in the effects on their quality of sleep. Melatonin is one of those hormones that is freely available in America, but not in Australia. Here you need a prescription and a compounding pharmacist, which makes it more expensive. All the pilots buy their melatonin in America. This double blind study seems to show that it had no benefit from taking melatonin. But these are the wrong people to trial. They do this for a living. The people that should have been trialed should have been one or two hundred people who are known to experience jet lag. The wrong people were tested and given the dose at the wrong time too. It should be given before bed time - bed time being the time you would normally go to bed in the local time zone, where you happen to be.

People can improve sleep by trying to sleep in the dark at the local time, when you are flying from one time zone to another.

Testosterone

Deficiencies of testosterone exist in both males and females. Typical emotional signs are fatigue, depression, emotional lability, timidity. People tend to be timid with low testosterone levels. Flabby cheeks, small wrinkles and pale face, flabby muscles and loose skin. It's well known that testosterone helps the bones to stay strong and this why fewer men have osteoporosis than women. For men there are weak erections and poor ejaculation, flabby penis and lowered libido. In women there is reduced clitoral sensitivity and also low libido.

Some of the positive emotional effects include positive mood, resistance to stress and anxiety, more energy and stamina, assertiveness and aggressiveness.

Other effects include virility, libido, good erections, fertility, and better ejaculations. It reduces cholesterol and heart disease, prevents osteoporosis, obesity, and builds muscle. As we get older men produce less testosterone, so they will be having more obesity and less muscle. Menopausal women experience more facial hair, more dryness of the skin and some women get acne in menopause.

The effects of over treatment include acne, greasy skin, hairs coming out of hair follicles in odd places on the face.

Effects of over treatment - and does this sound familiar to you - aggressive and disruptive behaviour in teenagers, excessive libido, acne and greasy hair, body odour and sweating, overdeveloped muscles - testosterone excess!

Pregnenalone

It is regarded as a memory hormone. One can purchase pregnenalone on doctor's prescription from a compounding chemist and is not

paid for by the government. With pregnenalone a bad memory becomes an ordinary bad memory. People with Alzheimer's and pre-Alzheimer and dementia have a terribly bad memory can improve, if deficiency exists and is treated.

The deficiency state of pregnenalone is characterized with poor memory, lack of concentration and cognitive functioning, having difficulty in simple mathematical calculation in the head.

Other signs include poor muscle tone, joint pains, especially at the fingers and wrist and elbows. Pregnenalone is one of the precursor hormones to DHEA, which is a precursor hormone for all the sex hormones.

Whereas DHEA is the most abundant hormone in the body, pregnenalone is the most abundant hormone in the brain. Thus it is an important hormone to the brain.

Pregnenalone enhances memory and fights depression, improves concentration, reduces fatigue, promotes tissue healing and helps to improve cognitive functions.

The effects of over treatment are overexcited behaviour, swollen face, hands and feet and greasy hair.

Growth Hormone

Growth hormone deficiency causes thin limp hair, droopy eyelids, face sagging and wrinkles, rounded shoulders, sagging triceps, dry sagging skin. Some of the emotional consequences are depression, anxiety, fatigue, feelings of insecurity and sleeplessness and receding gums. Deficiency causes fatty breasts and belly. One may have trouble being assertive, lack interest in social behaviour or appear to need a lot of sleep.

With supplementation some of the emotional effects are that it lessens anxiety. It increases seren-

ity and security. There is less need for sleep and people become more assertive and decisive. People given growth hormone can get away with a few hours sleep at night, according to some Russian experiments. One could describe it as the *leader of the gang* hormone. The natural leader of a gang will be found to have plenty of growth hormones in their body.

Nearly anyone could benefit if they had growth hormone injections every day or second day. They will feel stronger, have more endurance, have more energy, better sleep, and feel more confident. It also prevents osteoporosis, obesity and wrinkles. Unfortunately, it is a large polypeptide hormone, and a very expensive injection.

Typically, a vial would cost about a \$1,000 for a month supply.

The concept of preventing your hormones going down as you get older fits into preventative health medicine. It is not going to happen universally for a long while.

An English doctor invented a poly-pill, with two blood pressure lowering agents, a cholesterol lowering agent, plus aspirin, which is a blood thinner. It has five ingredients altogether. He believes that if everybody at the age of fifty started taking the poly-pill, heart disease, the main killer in Western Society, would be radically diminished.

As a concept of the future, I am proposing there will be an equivalent of the hormone poly-pill. These would be in very low doses.

There are already some anti-aging clinics and they will make their own tailor-made poly-pill before you have a problem.

Preventive hormone medicine is really only in its infancy. Medical technology is advancing at an enormous rate.

Alzheimer's Disease AND Hypoglycemia

Prevention of dementia: Life expectancy still increases linearly, and the elderly part of the European population grows rapidly in relation to the young. Dementia, however, grows even more rapidly, because it increases exponentially after age 65; it will become a great burden if nothing is done. The discussion so far is concentrated on treatment, whereas prevention is neglected. The therapy of dementia, however, has limited effect. Contrary to a widespread opinion prevention is possible. Genetic factors alone dominate the fate of cognition only in about 3 % of the cases. Besides age, lifestyle and the vascular risk factors exercise a great influence. High blood pressure carries a fourfold risk, diabetes more than doubles the risk both of the vascular and of the Alzheimer type; combined even more. Especially cerebral microangiopathy is strongly associated with Alzheimer's dementia, it triggers the vicious circle which leads to amyloid deposition. The importance of the circulation is underestimated, because most of the microvascular cerebral lesions are not perceived by the patient. All the risk factors for Alzheimer's disease after age 65 are also vascular risk factors especially for microangiopathy: Apo-E4, oestrogen deficiency, **insulin resistance, diabetes**, arterial hypertension, high cholesterol, old age and increased plasma homocystein which is often

caused by alcohol consumption even in moderate doses. A healthy life style with daily outdoor activity and a Mediterranean diet not only reduces the risk of dementia, but also of coronary death and cancer. Cognitively stimulating activity protects even more than physical activity against dementia; the basis for this is acquired in youth by education. Therapy with statines is advisable if atherosclerosis cannot be reasonably counteracted by physical activity and diet.

Kornhuber HH. [Prevention of dementia (including Alzheimer's disease)] **Gesundheitswesen**. 2004 May;66(5):346-51. German. PMID: 15141356

"Recent epidemiological evidence indicates that **insulin resistance**, a proximal cause of Type II diabetes [a non-insulin dependent form of diabetes mellitus (NIDDM)], is associated with an increased relative risk for **Alzheimer's disease (AD)**. In this study we examined the role of dietary conditions leading to NIDDM-like insulin resistance on amyloidosis in Tg2576 mice, which model AD-like neuropathology. **We found that diet-induced insulin resistance promoted amyloidogenic beta-amyloid (Abeta) Abeta1-40 and Abeta1-42 peptide generation in the brain that corresponded with increased gamma-secretase activities and decreased insulin degrading enzyme (IDE) activities"**

"Our study is consistent with the hypothesis that insulin re-

sistance may be an underlying mechanism responsible for the observed increased relative risk for AD neuropathology, and presents the first evidence to suggest that IR signaling can influence Abeta production in the brain."

Ho L, Qin W, et als., Diet-induced insulin resistance promotes amyloidosis in a transgenic mouse model of Alzheimer's disease. **FASEB J**. 2004 May;18(7):902-4. Epub 2004 Mar 19. PMID: 15033922

Affective disorders (ad) and **Alzheimer's disease (AD)** have been associated for almost a century, and various neurophysiologic factors have been implicated as common biologic markers. Yet, links between ad and AD still await elucidation. We propose that **insulin resistance (IR)** is one of the missing links between ad and AD. IR with hyperinsulinemia and subsequent impairment of glucose metabolism especially in ad patients may promote neurodegeneration and facilitate the onset of AD. According to our hypothesis, IR may persist even into ad remission in some patients. Persistent regional hypometabolism and vascular changes resulting from longstanding IR may lead to currently irreversible structural changes. Evidence in support of the hypothesis is reviewed and clinical implications suggested.

Rasgon N, et als., Insulin resistance, affective disorders, and Alzheimer's disease: review and hypothesis. **J Gerontol A Biol Sci Med Sci**. 2004 Feb;59(2):178-83; discussion 184-92. Review. PMID: 14999034

Recipes

by
Sue Litchfield

In the next newsletter if possible I would like to be able to publish a list of foods that are available at the supermarkets how ever this is a huge task so if anyone out there is willing to help out with a list of products they find PLEASE send them in or leave the list at the surgery or with Lorraine or Jeanette I feel this list is long over due and can only be done with the help of fellow members

CHEESE DIP

- 1 carton Soya cottage or Soya cream cheese
- 1 small carrot chopped
- 1 shallot chopped
- 1 stick celery
- 1 small Lebanese cucumber chopped
- 2 tabs chopped parsley

Combine all ingredients in a bowl. Serve with dried biscuits and or fresh vegetable sticks If mixture is a little too thick thin with a little yoghurt of choice

POPPY SEED DRESSING

- 1/2 cup sheeps or goats yoghurt
- 1 Tbsp fresh lemon juice
- 1/4 tsp dried rosemary leaves
- 1 tsp dried basil
- 1 tsp dried mustard powder
- 1/2 tsp poppy seeds
- 1 Tbsp chopped fresh parsley

Place yogurt, lemon juice, rosemary, basil, mustard, poppy seeds and parsley in a screw top jar and shake until well combined.

Great over pasta or potato for a change I lashed out and made this with Buffalo yoghurt and it was

great

Thick" Sweet" Cream

- 1 cup soymilk
- 350g tofu
- 2 tablespoons rice syrup or pear concentrate

Combine all ingredients in a blender and puree until smooth. Serve over desserts, great over stewed fruits and sounds strange but also works as a dressing to Potato salad ,

PORK in COCONUT MILK

- 550 gram pork tenderloin fairly thinly sliced
- 2 tabs oil
- 350 gram snow peas topped and tailed
- 1 red capsicum seeded and finely sliced
- 1/2 cup chicken stock
- 1 cup coconut milk
- 2 tabs peanut butter (or butter of choice)
- Salt and pepper to taste

In a wok or large frying pan heat 1/2 oil add the snow peas and sliced capsicum and fry till tender. Remove fro wok/pan. Keep warm. Add rest of oil. Add Pork and cook for about 5 mins or till cooked. Remove from wok and keep warm.

Add stock, coconut milk and peanut butter to wok stir till smooth Bring to the boil add pork to reheat and coat with sauce

To serve place the vegetables on a serving plate Add pork mixture and serve with a bowl of boiled rice

Rack of Lamb

- 2 racks of lamb enough to serve 2 people
- 1/2 cup parsley
- 1/2 cup coriander
- 2 cloves crushed garlic
- 2 tabs mint leaves
- 1/2 teas ground cumin

- 1/2 teas ground coriander
- 1 tab lemon juice 2 tabs oil

Place all the herbs in a processor and process to a paste.

Make a couple of incisions in the racks of lamb and rub all over and in the incisions allow to stand for about 1/2 -1 hour. Bake in a hot oven for about 30 mins on until the lamb is cooked as desired

NOTE : this is also great cooked in a webber

STIR FRY SALMON

- 1 tsp sesame oil
- 1 Tbsp vegetable oil
- 2 cloves garlic, crushed
- 2 Tbsp fresh ginger
- 500 grams Salmon finely chopped bite sized cubes
- 200 g snow peas topped and tailed

Heat sesame oil and vegetable oil in a wok or pan. Add garlic and finely chopped ginger, cook until browned. salmon and, snowpeas and cook until salmon is medium rare, or to your liking.

N.B. Any firm fish such as blue eye cod etc could be used I stead of the salmon

Thai Green Risotto

- 3 cups boiling vegetable stock
- 1 tab vegetable oil
- 1 onion finely chopped
- 2 tabs good quality Thai green curry paste
- 4 kaffir lime leaves finely sliced
- 1 teas finely grated ginger fresh
- 1 cloved garlic cruched
- 200 gr aborio rice
- 150 mil coconut cream
- 1/4 cup mixed asian herbs finely chopped
- 1 tab grated lime rind
- 2 tabs lime juice

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Why Hypoglycemics may prefer Alcohol as a major Source of Energy.

Jurriaan Plesman BA (Psych), Post grad Dip Clin Nutr

It is essential, that the treatment of alcoholism or for that matter any addiction or mental illness, must be accompanied by the hypoglycemic diet.

The idea that there is relation between diet and alcoholism has been around for a long time, but has also been dismissed as being much of a nonsense, especially by those who believe that alcoholism is primarily a MENTAL disease, rather than a PHYSICAL disease.

Thus I want to explain in purely biochemical terms why hypoglycemics may prefer alcohol as their source of energy. I have to simplify the system to some extent.

All biochemical energy is concentrated in a chemical substance called ATP (Adenosine triphosphate). Consider this a biologically charged battery used in all tissues of the body and the brain. When the energy has been delivered ATP becomes ADP (Adenosine Diphosphate). The recharging of that battery is through nutrition.

The ultimate source of energy comes in the form of glucose in food. In normal glucose metabolism (glycolysis), the glucose is converted by ten biochemical reactions into pyruvate. Pyruvate is then converted to Acetyl-CoA and enters the Citric Acid Cycle (also known as Krebs Cycle) to produce ATP with byproducts of carbon dioxide CO₂ and water (H₂O).

Isn't it marvellous how plants use our waste products to synthesize glucose again in their leaves using energy from the sun?

The conversion of pyruvate to Acetyl-CoA releases perhaps 80 per cent of all energy derived from glucose, hence this is an important junction in the production of energy (ATP). This is then used as an energy source by our muscles and brain cells. At this junction oxygen is used in the process called aerobic respiration. In any biochemical reaction some ATP is used to energize the enzymatic reactions. At the junction of pyruvate to Acetyl-CoA more ATP is gained then used.

A major source of energy starvation of the brain is insulin resistance (hypoglycemia). In this condition receptors for insulin fail to deliver proper amounts of glucose - the forerunner of all energy - into cells from which the energy is produced in mitochondria. Thus hypoglycemia occurs at the entrance point of the glucose biochemical pathway.

A short cut in the production of energy (ATP) is by way of using of alcohol, or ethanol.

Outside non-human organisms, such as Brewer's Yeast, can ferment ethanol from pyruvate. Thus up to the point of pyruvate all organisms have a similar glucose metabolism. By using alcohol produced from pyruvate by other or-

ganisms, we can bypass about ten steps used in normal glycolysis from glucose. So the body saves a lot of energy (ATP) by using ethanol. In addition ethanol does not need oxygen for conversion to energy (Anaerobic respiration). This is the most ancient form of energy production dating back to evolutionary times when organisms lived in an atmosphere lacking oxygen.

Ethanol (alcohol) is converted to acetaldehyde in the liver via the enzyme alcohol dehydrogenase, a zinc dependent enzyme. This explains why many alcoholics are found to be zinc deficient.

Acetaldehyde is then converted to acetate (via the enzyme aldehyde dehydrogenase). The next step is the conversion of acetate (via enzyme acyl-CoA synthetase) to acetyl-CoA, when it joins the citric acid cycle to produce ATP.

As an aside, some scientists have found that alcoholics metabolize acetaldehyde differently from non-alcoholic people, in that it is converted to excess amounts of dopamine responsible for feeling of a high. This is seen at the major source of addiction. Look up THIQ in our search engine.

I hope you have not fallen asleep by the time you reach this point, but it should be clear why hypoglycemic people may choose alcohol as their preferred source of energy. When insulin resistance

limits access to proper levels of glucose as a major precursor to energy (ATP) inside body cells (including brain cell), we can bypass that by using a non-glucose source of energy from other organisms that have synthesized it on our behalf from pyruvate.

This also explains that alcoholism does not cause hypoglycemia as is sometimes believed, but is the result of a pre-existing hypoglycemic condition.

If we want to treat alcoholism we MUST take steps for the body to be able to produce its energy (ATP) from normal glucose sources in our diet. This can be done by sensitizing receptors for insulin, taking such things as chromium picolinate, zinc and by reducing the onslaught of excess sugar (as a

source of glucose) that damage insulin receptors, by increasing high quality proteins that are converted more slowly to glucose and to enzymes and beneficial neurotransmitters such as serotonin and dopamine.

These sources are all found in a natural hypoglycemic diet.

You can wake up now.

<--- Page 10 Recipes

Heat oil in a fry pan over a low heat cook onion for 2-3 mins or till softened. Add curry paste cook for a few seconds, then add lime leave, ginger, garlic and rice. Cook for a minute or so. Add the boiling stock gradually stirring to prevent sticking When cooked absorbed add 1/2 coconut cream season to taste Remove from heat and cover till ready to serve.

Add chopped herbs, lime rind, juice and remaining coconut cream

Serve

This is a family favourite that is great with salmon or marinated or plain chicken.

Publicity Officer

The Association is looking for a person with a computer and internet access who is willing to become our Publicity Officer (PO). The aim is to advertise our meetings in local Newspapers. It is not an arduous task as the PO should contact the editors of these local newspaper and ask them to put our ads in their "Community Events". This can be done by just sending emails to the editors on the PO's data base, advising them of our meetings.

The PO is free to think of other means to publicize the activities of our Association. He/she will be working in close cooperation with the Editor, Jur Plesman.

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Feel free to contact any of the above members for suggestions.

BEQUEST TO THE HYPOGLYCEMIC HEALTH ASSOCIATION OF AUSTRALIA

If you would like to include a bequest to the Hypoglycemic Health Association of Australia in your will, the following options will guide you in its wording.

Option 1: I devise the sum of \$..... to the Hypoglycemic Health Association of Australia for the general purposes OR for the specific purpose of such purpose being consistent with the aims and objectives of the Hypoglycemic Health Association of Australia.

Option 2: (for a proportional bequest) I give the Hypoglycemic Health Association of Australia for its general purposes or the specific purpose of per cent of my estate.

The gift you make to the Hypoglycemic Health Association of Australia will be an enduring record of you.

THE HYPOGLYCEMIC HEALTH ASSOCIATION
P.O. BOX 830, KOGARAH NSW 1485
MEMBERSHIP APPLICATION

PLEASE PRINT

Surname: _____

First Name: _____

Address: _____

Town/City: _____ **Postcode:** _____

Phone: _____ **Age:** _____

Membership \$22.00 pa			
Pensioners \$16.50 (incl GST)	RENEWAL	<input type="checkbox"/>	Occupation _____
Life Membership \$200	NEW MEMBER	<input type="checkbox"/>	_____

Do you have hypoglycemia? YES/NO **Does a family member have hypoglycemia? YES/NO**

My Email Address:

2004 MEETING DATES ON FIRST SATURDAYS OF MARCH - AUGUST - DECEMBER